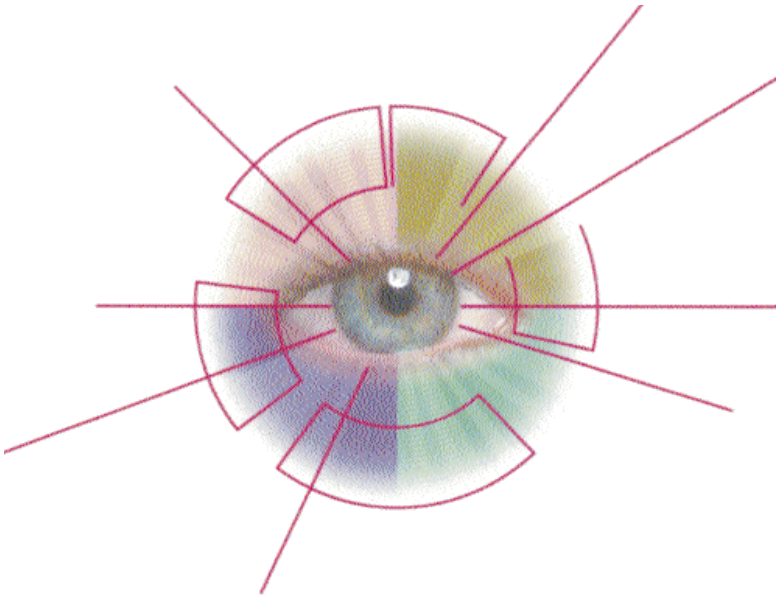


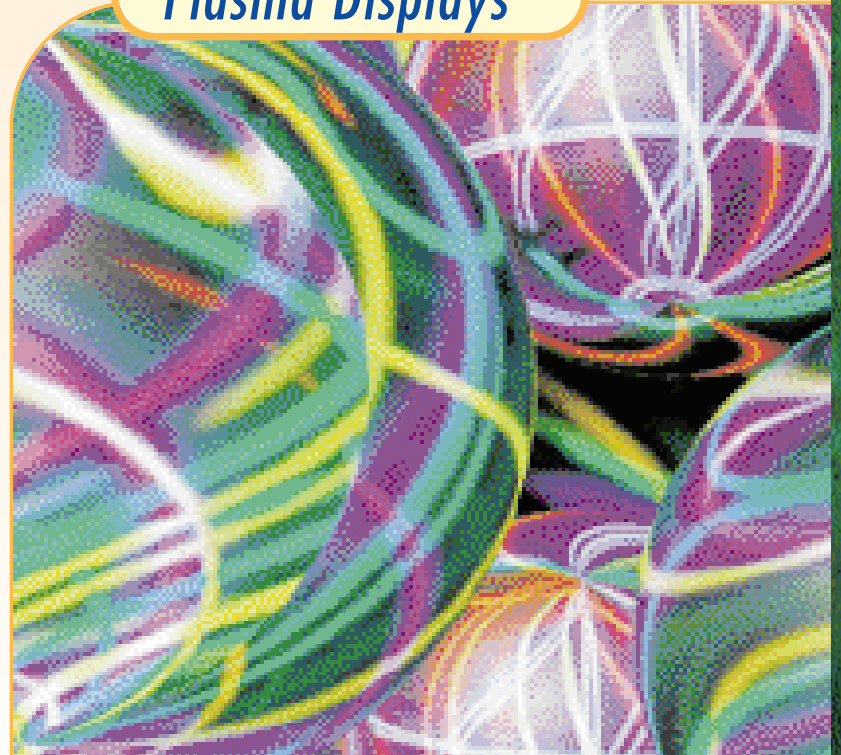
Plasma Displays



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Plasma Displays



INDEX :

- What is Plasma?
- History of Plasma
- Why/Where to use Plasma
- How to buy Plasma/Questions to ask

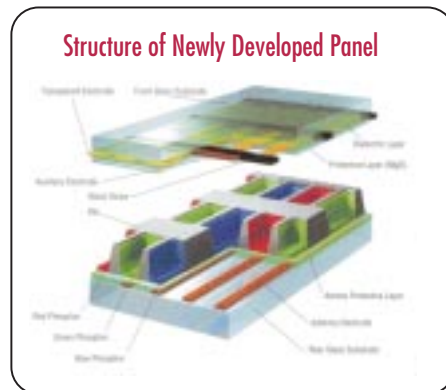


Pioneer

WHAT IS PLASMA?

What is a plasma display & How does it work?

Plasma technology is different from that used in other display systems in that red, green and blue lights are created in every pixel, reducing the need for space. Charged electrodes between glass panels cause tiny pockets of inert gas to change a state of plasma. This process causes UV Light to be produced, which in turn reacts with the red, green, and blue phosphors in each pixel to produce visible light. Unlike traditional displays, where the image is scanned across the screen, in plasma displays all pixels are "lit" at once. Having no electron beam, back lighting or light polarization, the image is inherently sharper and brighter. Perfect from edge to edge.



The story behind flat plasma displays:

The concept for Plasma Display Panels was first developed in July of 1964 at the University of Illinois. The first displays were nothing more than points of light created in laboratory experiments. The technology is constantly being improved and by the late 60's, the technology had become advanced enough to create geometric shapes. In the early stages, scientists were limited on size and image quality, resulting in plasma displays having limited applications.

Today, the progression in high speed digital signal processing, materials development and advanced manufacturing, have made full color, bright flat plasma displays possible and applicable. Once what was only thought of as Science Fiction is now available and ready to use in a host of new and exciting ways.

WHY / WHERE TO USE PLASMA?

Why choose plasma over other presentation systems

(i.e. front view projectors and TV screens)

- Plasmas perform extraordinarily well under most ambient light conditions. Very bright light does not wash out the image on the screen. The beauty of these flat screens is that, unlike front view projection screens, you don't have to turn off the lights to see the image clearly and easily. Therefore, plasmas are excellent for video conferencing and other presentation needs which require the lights to remain on.

- ▶ Another characteristic of a plasma panel is the extreme viewing angles both vertically and horizontally. With 160 degrees viewing angle, people sitting off to the side of the plasma screen will still be able to see the image without losing any of it.
- ▶ Plasmas tend to be very lightweight in comparison to similar sized standard display monitors and television screens. The Pioneer 50 inch plasma, for example, weighs less than 89 pounds!
- ▶ No existing display system can compete with the low depths available in plasma panels. The thinness of these systems allows for the monitors to be placed virtually anywhere. Some plasma panels are known to be as thin as 3.5 inches deep.
- ▶ They can be hung on walls, mounted to ceilings, flush wall mounted or placed on a table top. Many mount manufacturers are designing more creative ways to mount plasma panels because of the ease of engineering involved.
- ▶ Plasma panels are also not affected by magnetic fields.
- ▶ Last but not least, plasmas are easy to use. Almost as easy as plug and play. They tend to accept inputs for both data and video (the industrial models). The main issue here is resolution. Be sure to find a panel that works with your resolution needs. All will show standard VGA (640 X 480) and some will accept signals all the way up to UXGA (the Pioneer 50 inch plasma for example).

Corporate IT Professionals are under increasing pressure to make their companies' meeting rooms 'PC friendly'. A group of people must be able to view data from a variety of sources PCs, Mac, workstations, VCR, DVD, video conferencing just to name a few. Prior to Plasma Display Panels, three less than ideal options have been available:

- ▶ Ceiling Mounted Data Projectors
- ▶ Rear Projection Units
- ▶ Large CRTs

Ceiling Mounted Data Projectors (LCD, DLP) – A projector is mounted from the ceiling, power, data and video cables are run through the wall to an accessible point near the floor. Then a motorized drop down screen is installed in the ceiling. Although data projectors can project large images, this technology has several drawbacks:

- ▶ It is expensive to install
- ▶ It requires expensive replacement bulbs
- ▶ It is loud and generates heat
- ▶ In many cases the images are not bright enough to be viewed in a fully lit room
- ▶ It is aesthetically unappealing

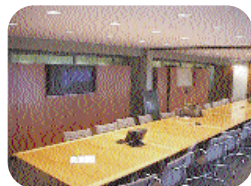
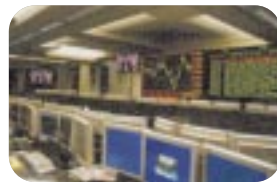
Data projectors have been used in rear projection housings. These units sometimes incorporate a touch screen and are brighter than ceiling hung projectors. However they are:

- ▶ Limited by Vertical or Horizontal viewing angles making it difficult if not impossible to sit off to the side during a presentation of any type
- ▶ Very Large causing valuable space to be reduced by 3 to 4 feet at times
- ▶ Heavy, generally over 250 lbs. therefore making it a permanent (not portable) display
- ▶ Aesthetically unappealing because it is difficult to integrate into the current setting. The setting usually must be interrupted and changed to accommodate this type of display system.

The final popular option is a large 30"+ CRT capable of displaying data. These large displays were originally designed to display video and in most cases are impressive when presenting video. They tend to be less than impressive when displaying data due to their interlaced signal and curved screens. In addition, CRTs are bulky weighing between 200 – 300 lbs., limiting their portability and reducing aesthetic appeal.

Other Applications -

Network Control Rooms – Data and Video can be displayed with equal quality and clarity, allow control room or network managers to constantly view the performance of their network.



Meeting Rooms - Make your meeting room PC friendly.

Executive Offices – The high tech look will be sure to impress customers, while serving the dual purpose of making your executives more effective during meetings and presentations.

Corporate Lobbies – Plasma is the ultimate high tech tool to display your company's products, services, or events in a visually appealing technology. Unlike light boxes which require static duratrans, these flat displays can show presentations or live video, making for a more informative and effective method of communicating with customers. You are practically guaranteed to gain their undivided attention.



Updateable Signage – Plasma's wide viewing angles thin profile and high brightness has allowed for the concept of digital signs that can be hung throughout offices, stores, shopping malls, or anywhere you want to share pertinent video or data to your employees or customers.

Touch Screens – Apply a touch screen to a plasma and you have a dynamic interactive digital work board.



Light Weight Plasmas – Can be mounted on a rolling stand and shared between several meeting rooms or offices.

Video Conferencing – Many companies use projectors with video conferencing. Projectors require dark rooms to produce vibrant images. Video Conferencing cameras require bright rooms to pick up images. These two technologies contradict each other. Because of its performance in ambient light. Plasma is the ideal display system for video conferencing.



HOW TO BUY PLASMA/QUESTIONS TO ASK:

Q. Know what aspect ratio you need (form factor) 4:3 or 16:9?

4:3 is the standard ratio used on monitors and projectors today. 16:9 is predicted to be the standard of the future.

Q. Can your plasma display 16.7 million colors?

Some plasmas can not display full color. These units are less than broadcast standard and will make many images look unnatural.

Q. What's the native resolution? Can it display computer graphics?

The native resolution is the actual numbers of pixels a display has. Most plasmas can show computer images. Plasmas with less native resolution than the computer signal will require scaling or compression

Q. What is the life expectancy? How many hours can the plasma last?

Some are known to last up to 30,000 hours while others are less far less. For an investment of this type you need to consider a robust commercial product with long life.

Q. Will the warranty cover my product in my application?

Some product warranties may exclude your specific application of the product. Check it before you buy.

Q. What about customer support/service?

Customer support is important - be sure to ask about service center locations and onsite technical support (Shipping a plasma offsite can be cumbersome and expensive, so you want to get technical support willing to come to you when you need help.)

Q. How easy will it be to integrate that particular plasma into your current setup? What extras will you need to get the plasma to function with your current computer equipment, etc?

Q. Ask about pixel size. Is the pixel uniform or varied? Is each sub-pixel the same size?

This will affect the quality of the image as variations in the size and shape of the pixels will cause distorted and unnatural images. Uniform pixel size is a good clue to the quality of the manufacturing behind the product.

Q. What is shadowing and how does your plasma handle it?

All plasmas regardless of manufacturer use phosphor. When a static image is left on screen for an extended period of time a shadow of that image may remain when the image is changed. If that static is left on long enough it could remain permanently. This is commonly referred to as 'burn-in'. Some plasmas are more susceptible to burn-in than others due to the way the manufacturer 'drives' the plasma.

Look for a plasma that has built in Automatic Brightness Limited (ABL). ABL subtly decreases brightness when it senses a still image. The chosen plasma should also have built in color washes that cleans the screen in the event of shadowing.



For more information on the Pioneer Plasma line, complete and mail the attached postage paid card, call us at **800-926-4329** or email us at **displays@pnmt.com**. Or visit our web site at **www.pioneerusa.com**

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